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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,712	02/27/2004	B. Raghava Reddy	HES 2001-IP-003428U1C1	9638
28857	7590	09/07/2005	EXAMINER	
CRAIG W. RODDY HALLIBURTON ENERGY SERVICES P.O. BOX 1431 DUNCAN, OK 73536-0440			SUCHFIELD, GEORGE A	
			ART UNIT	PAPER NUMBER
			3676	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,712

Applicant(s)

REDDY ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-130 is/are pending in the application.
- 4a) Of the above claim(s) 1-112, 114, 117 and 118 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 113, 115, 116 and 120-130 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-113 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/19/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

No basis can be found in the specification for the limitation in claim 120 wherein the treatment fluid does not comprise a surfactant.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 115, rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 115, 121, 123, 125, 126, 129 and 130 are deemed indefinite in being drawn to improper Markush groupings. As noted in MPEP Section 2173.05(h), the use of the term "comprising" or "comprises" is improper in setting forth the Markush grouping. Accordingly, in lines 1 or 2 of each of these claims, or line 4 of claim 130, the transitional phrase "comprises" must be changed to, -- is selected from the group consisting of -- or -- is --.

Claim 120 is deemed indefinite as it directly conflicts with parent claim 113 which clearly requires a surfactant. Thus, the scope of claim 120 is unclear.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 113-115, 116, 120-130 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of U.S. Patent No. 6,715,553.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the range of gas generating chemical in the amount of 0.1% to about 10% by weight in the well treatment fluid utilized in the well treatment process of pending claim 113 is deemed to overlap the corresponding range of gas generating chemical in the patent claims, e.g., the range of 10% to about 100% by weight in patent claim 1, and the range of 0.3% to about 8% by weight in patent claim 5, with any difference therebetween deemed an obvious matter of choice or design based on, e.g., the characteristics and composition of the subterranean zone(s) actually encountered in the field.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. Claims 113, 115, 116, 120, 121-123 and 126-130 are rejected under 35 U.S.C. 102(b) as being anticipated by Hazlett (4,813,484).

Hazlett (note col. 2, line 39 – col. 3, line 2; col. 3, lines 30-65; col. 5, lines 1-67) discloses a method of treating a subterranean formation by providing and injecting a lightweight well treatment fluid into the formation which includes a gas-generating agent for forming a gas in the treatment fluid, a surfactant for foaming the well treatment fluid. Hazlett may further include the gas-generating agent in an exemplary concentration range of “0.51% to about 5.0% by weight” which falls within the recited gas-generating chemical of independent claim 113, as well as the recited gas-generating chemical of claim 127.

As per claim 115, Hazlett discloses that an accelerator for the gas-generating chemical may be included in the well treatment fluid, including the use of a mineral acid for the gas-generating chemical “DNPT”. In this regard, it is deemed that Hazlett inherently includes hydrochloric acid, insofar as hydrochloric acid comprises a “mineral acid” by definition.

As per claim 116, insofar as the gas-generating chemical is present in the well treatment fluid within a preferred ranges of “0.05% to about 0.5% by weight” and “0.51% to about 5.0% by weight”, it is deemed that the mineral acid accelerator, as noted above with respect to claim 115, would inherently be present within a similar concentration range or at least less than or equal to 30% by weight.

As per claim 120, it appears that the embodiment of Hazlett set forth in col. 5, lines 1-21 does not require the presence of a surfactant, i.e., the beneficial effect on the formation is accomplished by the gas or “bubbles” yielded by the decomposing gas-generating agent.

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As per claims 121 and 130, Hazlett (note col. 5, lines 50-67) may further include one or more of the recited components, such as an activator comprising a pH buffer and/or oxidizer.

As per claim 122, it appears that the gas-generating agent decompose during the injection and/or application of the well treatment fluid for treating the subterranean formation.

As per claim 123, the yielded gas appears to comprise nitrogen.

As per claim 126, the gas-generating agent, or chemical of Hazlett comprises one or more of the Markush species recited, such as azodicarbonamide.

As per claims 128 and 129, Hazlett (note col. 3, lines 30-57) may utilize a mixture of foaming agents including one or more of those listed in claim 129. For example, the sulfated polyoxyalkylated alcohol surfactant foaming agent of Hazlett appears to correspond to the ethoxylated alcohol ether sulfate surfactant of claim 129.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 124 and 125 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hazlett (4,813,484) as applied to claim 113 above, and further in view of Burkhalter et al (4,450,010).

Hazlett teaches the methods of generating gas in and foaming a well fluid as applied to claims 1, 10, or 23 above. It is not taught that the well fluid further comprises a gas production rate enhancing agent. Burkhalter et al teach a method of generating gas in a well fluid similar to that of Hazlett. Burkhalter et al further teach that a gas production rate enhancing agent selected from the group of agents as currently claimed is added to the well fluid (see col. 3, lines 35-36).

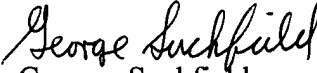
Accordingly, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to add the enhancing agent taught by Burkhalter et al to the well fluid of Hazlett, since Burkhalter et al show that it was known in the art to add an enhancing agent to an already existent gas generating chemical in a well fluid (see col. 3, lines 29-36).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


George Suchfield
Primary Examiner
Art Unit 3676

Gs
September 1, 2005